

ABSTRACT OF THE DISCLOSURE

A method and apparatus permit information transfer and reception over a communication system that provides the separation of the useful signal from the interference with low BER, independent from its origin, i.e. whether the interference is orthogonal or non-orthogonal relatively to the useful signal and as a result have a high protectability from the interferences.

In particular, each subscriber device is assigned a unique address code (a binary code) and a specific code for encoding the information "1" bits. Each period of a clock rate contains a repetition of the Unique Address Code of the subscriber, also referred hereinafter as Unique Address Code (UAC) together with the actual information. The information signal is placed in the time intervals where the Unique Address Code bits have zero value. The Unique Address Code signal and the information signal are both transmitted on the same clock rate and carrier frequency. The Unique Address Code signal is the Pilot Signal.

The receiver device first attempts to detect the address of the transmitter device by comparing the incoming signal with the receiver's internal Reference Signal. The Number of Continuous Clock Rate Periods (NCCRP) of the Reference Signal, which continuously match exactly with the incoming signal acts as the criteria for address detection. The Reference Signal (RS) is generated in the receiver device. In simplex operation, the Reference Signal (RS) acts as the Address Code of the transmitter device. In duplex operation, the Reference Signal can act as its unique Address Code of the receiving subscriber or as the Address Code of the transmitting subscriber, depending on the party that first initiates the communication. When the measured value of the Number of Continuous Clock Rate Periods (NCCRP) surpasses the Threshold Value of Matches (TVM), then the incoming information is assumed to be for the receiving subscriber and the receiver device is synchronized with the transmitter device of the transmitting subscriber. Synchronization is being performed by the Unique Address Code signal. Subsequently, a channel in the receiver device is opened to receive and

process the information. The useful signal is then separated from interferences, and the information enters the receiver's registering device.